

Amendments to the Claims:

1. (currently amended): A p[P]rojection exposure apparatus for microlithography, comprising:having
 - a) an illumination system device (12) for generating projection light (13),
 - b) a projection objective comprising (20) ~~with a plurality of optical elements for imaging (L1 to L5; L5'), by which a reticle (24) that can be arranged in an object plane (22) of the projection objective (20) can be imaged onto a photosensitive surface (26), which can be arranged in an image plane (28) of the projection objective (20) and is applied on a support (30), and having~~
 - c) an immersion device (42) for introducing an immersion liquid (34) into an immersion space formed between a last optical element on the image side of the projection objective and the photosensitive surface, wherein said immersion device

comprises a suction device having a suction nozzle opening into the immersion space and

is configured to extract gas bubbles from the immersion liquid during the exposure operation.
2. (currently amended): The apparatus of claim 1, wherein the suction device is configured to extract the gas bubbles during operation of the apparatus.
3. (currently amended): The apparatus of claim 1, wherein a support for the photosensitive surface is configured to be displaceable in a scanning direction of the projection exposure apparatus, and wherein the immersion space is bound by side walls only parallel to the scanning direction, but not perpendicular thereto.

4. (cancelled)
5. (currently amended): A projection exposure apparatus for microlithography, comprising:
- a) an illumination system for generating projection light,
 - b) a projection objective comprising a plurality of optical elements for imaging a reticle onto a photosensitive surface,
 - c) an immersion space formed between a last optical element on the image side of the projection objective and the photosensitive surface, said immersion space being confined by at least one side wall, and
 - d) an ultrasound source which induces oscillations in said at least one side wall for removing gas bubbles in an immersion liquid introduced into the immersion space.
6. (currently amended): A projection exposure apparatus for microlithography, comprising:
- a) an illumination system for generating projection light,
 - b) a projection objective comprising a plurality of optical elements for imaging a reticle onto a photosensitive surface, and
 - c) an immersion device for introducing an immersion liquid into an immersion space formed between a last optical element on the image side of the projection objective and the photosensitive surface, wherein said immersion device comprises circulation means for circulating the immersion liquid in the immersion space, said circulation means comprising

a circulating pump,

a filling nozzle opening into the immersion space,

a suction nozzle opening into the immersion space, and

a degasser for removing gas bubbles from the immersion liquid.

7. (cancelled)

8. (currently amended): The apparatus of claim 6, wherein the degasser comprises

a run-off surface that is obliquely arranged so that immersion liquid which is
applied from above runs down the surface, and

means for establishing a negative pressure above the run-off surface.

9. (cancelled)

10. The apparatus according to claims 6, wherein the circulation means are integrated into the
projection objective.

11. (cancelled)

12. (cancelled)

13. (cancelled)

14. (currently amended): A projection exposure apparatus for microlithography, comprising:

a) an illumination system for generating projection light,

b) a projection objective comprising a plurality of optical elements for imaging a reticle onto a photosensitive surface,

c) an immersion device for introducing an immersion liquid into an immersion space formed between a last optical element on the image side of the projection objective and the photosensitive surface, wherein said immersion device is configured to introduce a flushing liquid different from the immersion liquid into the immersion space.

15. (cancelled)

16. (currently amended): A method for introducing an immersion liquid into an immersion space which is formed between a last optical element on the image side of a projection objective of a projection exposure apparatus for microlithography and a photosensitive surface to be exposed, comprising the following steps:

a) wetting the photosensitive surface and the last optical element with the immersion liquid, wherein a support for the photosensitive surface is outside a beam path of the projection exposure apparatus;

b) bringing the support up to the last optical element in a movement parallel to an image plane of the projection objective, so that the immersion liquids on the last optical element and on the photosensitive surface touch;

c) introducing the support completely into the beam path in a movement parallel to the image plane until the support reaches the required position for exposure.

17 (new) A projection exposure apparatus for microlithography, comprising:

a) an illumination system for generating projection light,

- b) a projection objective, which has an image plane and comprises a plurality of optical elements for imaging a reticle onto a photosensitive surface arranged in the image plane,
- c) a wedge-shaped immersion space formed between a last optical element on the image side of the projection objective and the photosensitive surface.